OSWER Innovations Pilot

Testing the Viability of Converting Wood Pallet Waste-to-Flooring

The Office of Solid Waste and Emergency Response (OSWER) Assistant Administrator Marianne Horinko in December 2001 initiated a series of innovative pilots to test new ideas and strategies for environmental and public health protection to make OSWER programs more efficient, effective, and user-friendly. A small amount of money is set aside to fund creative proposals submitted by OSWER Headquarters and Regional employees. EPA employees are encouraged to talk to States, Tribes, local governments and external stakeholders about proposal ideas and partner on a project. The creative projects test approaches to waste minimization, energy recovery, recycling, and land revitalization that may be replicated across various sectors, industries, communities, and regions. We hope these pilots will pave the way for programmatic and policy recommendations by demonstrating the environmental and economic benefits of creative, innovative approaches to the difficult environmental challenges we face today.

BACKGROUND

An estimated 75% of wood pallets are currently landfilled in the southern U.S. In North Carolina alone over 305,000 tons per year of wood pallets are disposed of in landfills. Wood pallets at the end of their useful life can be converted into value-added products, such as wood flooring or replacement parts for other pallets instead of being disposed of in landfills. Pallet manufacturing uses the largest amount of hardwoods (4.5 billion board feet annually) of any industry in the country. Waste pallets represent a sizeable portion of the construction and demolition waste stream (3.3 %) and municipal solid waste management operations (2 %).

Businesses that repair and recycle pallets are on the increase, but they create scrap wood waste streams that are expensive to manage. The cost of disposing of a standard pallet is between $0.50 and $1.25, plus transportation and handling. On the other hand, when the pallet is recycled into a value-added product, it generates approximately $0.25 when sold as boiler fuel, $1.00 for chips used for particle board production, $2.00 to $3.00 when disassembled and used for pallet repair replacement parts, and potentially $5.00 to $8.00 when processed into products such as flooring. The U.S. Forest Service's Southern Research Station and various partners have put considerable effort into demonstrating the technical and financial feasibility of reusing and recycling pallets and have already begun the first phase of a process to test reusing wood pallets as flooring and paneling.

PILOT APPROACH

Land-of-Sky Regional Council, in partnership with U.S. EPA Region 4, the North Carolina State University, the U.S. Forest Service, and the State of North Carolina Division of Pollution Prevention and Environmental Assistance, will continue the progress already made by implementing the pallet-to-flooring processes and disseminating information about the project nationwide. The Pilot will support the start-up of a new pallet flooring product line. Project staff will assist business partners in product testing, quality assurance, certification, test marketing, and distribution network building. Partnerships will be developed with retail building suppliers to carry the new pallet flooring product lines. The Pilot also will provide the technical expertise to guide the process. Pilot results will be disseminated via case studies, web articles, and professional journal articles.

INNOVATION

The Pilot will test a new, economically viable recycling business creating commercially manufactured flooring

produced from pallet waste. The project will help close the loop for wood pallet recycling. Very few high-value products have been reclaimed from this waste stream, which historically has been landfilled. The project will establish markets and manufacturing infrastructure to process this wood scrap into a finished material with a $4-5 per square foot value. This recycled flooring product will be a "green" product. It will be industrially pre-finished with a water-borne UV curable process, which will eliminate on-site sanding that produces uncontrolled dust and on-site application of VOC flooring finishes that produces hazardous gases within building interiors.

BENEFITS

This project will test efforts to convert this waste stream into value-added flooring products. Benefits include conserving valuable public landfill capacity, reducing methane gas releases from pallet wood decomposition in the landfill, and reducing demand for hardwoods from regional forests and thus achieving more carbon dioxide sequestration. The Pilot will take a "negative-value" material and process it into a finished material with a $4-5 per square foot value. The new value-added business will result in increased manufacturing jobs for western North Carolina communities. Product marketing will help raise public awareness about environmental stewardship, green building products, and recycling.

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For additional information, visit the EPA OSWER Innovations web site at: www.epa.gov/oswer/IWG.htm